

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/011124

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ A61K45/00, 31/7105, 31/711, 38/45, 39/395, 48/00, A61P9/04,
G01N33/15, 33/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ A61K45/00, 31/7105, 31/711, 38/45, 39/395, 48/00, A61P9/04,
G01N33/15, 33/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA (STN), MEDLINE (STN), EMBASE (STN), BIOSIS (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X Y | Yoshiharu Higuchi et al., The Small GTP-binding Protein Rac1 Induces Cardiac Myocyte Hypertrophy through the Activation of Apoptosis Signal-regulating Kinase 1 and Nuclear Factor- κ B, The Journal of Biological Chemistry, Vol.278, No. 23, pages 20770 to 20777, 06 June, 2003 (06.06.03) | 1-3, 7-15 4-6 |
| X Y | Shin'ichi HIROTANI et al., Involvement of Nuclear Factor- κ B and Apoptosis Signal-Regulating Kinase 1 in G-Protein-Coupled Receptor Agonist-Induced Cardiomyocyte Hypertrophy, Circulation, 2002, Vol.105, pages 509 to 515 | 1-3, 7-15 4-6 |
| K | | |

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
26 October, 2004 (26.10.04)

Date of mailing of the international search report
16 November, 2004 (16.11.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | Thomas Force et al., Apoptosis Signal-Regulating Kinase/Nuclear Factor- κ B A Novel Singaling Pathway Regulates Cardiomyocyte Hypertrophy, Circulation, 2002, Vol.105, pages 402 to 404 | 1-3,7-15 4-6 |
| P,X | Xiangrong He et al., ASK1 Associates with Troponin T and Induces Troponin T Phosphorylation and Contractile Dysfunction in Cardiomyocytes, American Journal of Pathology, Vol.163, No.1, July 2003, pages 243 to 251 | 1-3,7-15 |
| X | JP 2002-539781 A (AVENTIS PHARMACEUTICALS PRODUCTS INC.), 26 November, 2002 (26.11.02), Full text; particularly, Par. No. [0078] & WO 00/56866 A2 & EP 1144600 A2 & AU 2000/38802 A & US 2003/01009431 A | 1-3,7-15 |
| Y | WO 02/38179 A (Kissei Pharmaceutical Co., Ltd.), 16 May, 2002 (16.05.02), Full text & AU 2002/24022 A & JP 2002-540761 A | 4-6 |
| Y | Masao SAITOH et al., Mammalian thioredoxin is a direct inhibitor of apoptosis signal-regulating kinase(ASK)1, The EMBO Journal, Vol.17, No.9, pages 2596 to 2606, 1998 | 4-6 |

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 16-20
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 16 to 20 pertain to methods for treatment of the human body by therapy or diagnostic methods and thus relate to a subject matter which this International Searching Authority is not required, under the provisions of Article 17(2)(a)(i) (continued to extra sheet.)
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.II-1 of continuation of first sheet (2)

of the PCT and Rule 39.1 (iv) of the Regulations under the PCT, to search.